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Meeting for Business, and Annual Meeting.

December 31, 1844.

VICE PRESIDENT MORTON in the Chair.

The Committee to whom was referred the following paper by Dr. Hallowell, read November 5, 1844, reported in favor of publication.

Description of New Species of African Reptiles.

By EDWARD HALLOWELL, M. D.

COLUBER *Phillipsii.*

Description.— Head elongated, flattened, covered above with nine plates; the rostral plate is hexagonal, rounded above, incurvated beneath, there are two anterior and two posterior frontal plates; the anterior are pentagonal; their posterior margin is the broadest. The posterior frontal are very large, pentagonal; there are two supra-orbitar, and one vertical plate; the supra-orbitar are of moderate size, the occipital are very large, triangular; there are two nasal plates, with the nostril placed between them; there is an anterior frontal, and a loral plate; there are two posterior orbitar plates; the eyes are large, the neck is narrow, the body is long and tapering, the scales upon the body are smooth and quadrangular; the tail is of moderate length.

Colour.—Body and tail greenish-olive above, with numerous black points; chin and throat light yellow; under surface of abdomen and tail tea-green. Abdominal scuta 172: subcaudal 22.

Dimensions.

	Feet.	*Inches.*
Length of head, - - -	0	1
Greatest breadth posteriorly, - -	0	½
Length of body, - - -	3	0
Length of tail, - - -	0	3⅝

This species I have named after my friend John S. Phillips, Esq.

BUFO *cinereus.*

Description.—Head small, body of moderate size, covered with numerous small warts; head and body of a light ash colour, with numerous dark coloured spots or blotches; under surface of chin, abdomen and limbs, light yellow; irides ———.

Dimensions

	Inches.
Length of body, - - - - -	2
Length of head, - - - - -	½
Breadth, - - - - - -	½
Length of anterior extremities, - - -	1
Length of posterior, - - - -	1⅛
Length of tarsus to extremity of longest toe, -	1

Plestiodon *Harlani.*

Description.—Head of moderate size, covered above with plates; of these the rostral is large, and rounded above; there are two nasal plates, with the nostril placed between them ; the vertical is large, elongated, hexagonal, incurvated laterally ; there are six supra-orbitar plates: there are two anterior orbitar with a loral placed between them and the nostril; there is one posterior orbitar and three inferior orbitar; there is a posterior frontal, which is large and pentagonal; there is a small quadrangular plate intermediate between the anterior frontal and the first supra-orbitar plate; there are six superior labials; the scales upon the back and sides of the body are hexagonal, presenting three striæ upon their surface; there are eight rows of smooth, hexagonal scales upon the abdomen, and five upon the under surface of the tail; tail cylindrical, covered with numerous hexagonal scales; extremities short and thick.

Colour.—Head, neck, and upper part of body light brown; sides of body presenting numerous dark coloured bands, extending from the back to the abdomen; the intermediate spaces are white; abdomen and under surface of tail, of a light yellow colour.

Dimensions.

	Inches.
Length of head, - - - -	$1\frac{1}{4}$
Breadth of head posteriorly, - -	$\frac{5}{8}$
Length of body, - - - -	4
Length of tail, - - -	$5\frac{1}{4}$
Length of extremity to extremity of longest finger,	$1\frac{1}{4}$
Length of posterior extremities, - -	$1\frac{5}{8}$

This species I have named after the late Dr. Harlan.

Dipsas *Blandingii.*

Description.—Head of moderate size, rather large, covered with nine plates, the central is large, pentagonal, broad in front; the supra-orbitar are pentangular; they are curved inferiorly for the reception of the superior margin of the eye; there are two anterior and two posterior frontal plates; the posterior are quadrangular, larger than the anterior; the anterior are quadrangular; the rostral plate is large; there are two nasal plates, the anterior the largest, with the nostril placed between them; there are two anterior orbitar plates, and two posterior; the anterior are quadrangular; the eye is large and projecting; between the nostrils and the anterior orbitar plates is a loral plate which is quadrangular; there are five temporal plates, the posterior of which is the largest; there are nine superior orbitar, of which the eighth is large and quadrangular; the posterior part of the head is covered with scales; the body is long, thick in the middle: the neck is slender; the scales of the body are smooth and quadrangular, with the exception of a row along the middle of the back, which are hexagonal.

Colour.—The superior and under parts of the body are light yellow; the body presents upon each side a series of blotches, of a leaden colour; the upper part of the head is light bluish; the throat and jaws are yellow. Abdominal scuta 272 : subcaudal 131.

Dimensions.

	Feet.	*Inches.*
Length of head,	0	1½
Breadth,	0	¾
Length of body,	4	0
Length of tail,	1	3½

Habitat.—Liberia, West Africa.

The above specimen was placed in my hands by my friend Dr. Blanding, in whose honour I have named it.

TROPIDOLEPIS *Africanus.*

Description.—Head of moderate size, quadrangular, depressed in front, supraorbitar ridges much developed; there is a ridge extending from the eye to near the extremity of the snout; the nostril is small, circular, placed nearer the extremity of the snout than the anterior margin of the orbit; between this ridge and the superior margin of the under jaw there is a depression, which is well marked; the tympanum is of a moderate size, depressed, at some distance below the level of the surrounding surface. There are twelve quadrilateral plates extending along the margin of the upper jaw. The rostral plate is hexagonal. There are eleven or twelve small quadrangular plates along the under margin of the under jaw. The head is covered with imbricated, polygonal scales; those upon the front and posterior part of it are strongly carinated; the vertical plate is hexagonal. The eyelids are covered with numerous small granules. There are two folds under the neck, which are well marked. The body is covered with quadrangular scales which are carinated. The tail is flattened beneath, rounded above and upon the sides. It exceeds the length of the head and body by about one inch. The abdomen, and under surface of the throat are covered with small quadrangular scales, which are also carinated; those upon the chin are smooth. The submental plate is smooth, pentagonal. The anterior extremities, when extended along the sides of the body, meet as far as the thighs. The posterior exceed the anterior extremities by the whole length of the toes and tarsus. The under surface of the legs, feet and tail, are covered with scales, which are strongly carinated. There are thirteen præanal pores. There is a small crest, extending from the occiput along the neck, and between the shoulders.

Colour.—Head brownish above; superior parts of body, tail and extremities, of a leaden ash colour. The same colour predominates upon the under surface of the chin and upon the abdomen. Under surface of thighs, legs and tail, light straw colour.

Dimensions.

	Inches.
Length of head,	1
Breadth posteriorly,	¾
Length of body,	2¼
Length of tail,	4¼
Length of anterior extremities,	1¾
Length of posterior extremities,	2⅛

LEPTOPHIS *viridis.*

Description.—Head of moderate size, covered above with nine plates, which are smooth; the rostral is hexagonal; the anterior frontal are pentagonal: the posterior frontal are larger than the anterior; they are hexagonal: there are six circum-orbitar plates, the anterior of which are the largest: the supra-orbitar plates are large: the vertical plate is also large and hexagonal, the anterior margin is the broadest: the occipital plates are large and pentagonal: there are eight superior labial plates, the seventh of which is the largest: the body is slender, covered above with quadrangular scales, which are smooth: the tail is covered above with numerous small hexagonal scales: those upon the under surface are bifid.

Colour.—Green upon the under surface of the body and tail; under surface of chin, neck and throat, of a light cream colour.

Dimensions.

		Feet.	*Inches.*
Length of head,	- - -	0	1
Greatest breadth,	- - -	0	$\frac{5}{6}$
Length of body,	- - -	1	$5\frac{1}{2}$
Length of tail,	- - -	0	5

Abdominal scuta, 211: subcaudal 107.

COLUBER *ater.*

Description.—Head of moderate size, covered above with nine plates: the anterior frontal are triangular; the posterior are large, and pentagonal; the vertical plate is also pentagonal; the supra-orbital plates are quadrangular; the occipital plates are large; the rostral plate is quadrangular, its superior margin being rounded where it is joined to the anterior and the nasal plates; there are two nasal plates, with the nostril placed between them; there are eight superior labials: the eyes are of moderate size, and projecting; irides ——; the neck is slender, the body rounded, covered above and upon the sides with quadrangular carinated scales; tail of moderate length, tapering, rather more than one-fourth the length of the body. Abdominal scuta 144: subcaudal 72.

Colour.—Head jet black above; body dark brown, approaching to black, with numerous irregular black bands, placed at unequal distances, extending as far as the abdomen; throat, chin, and under parts of body, light green, clouded with numerous dark coloured spots; under part of tail dark brown, approaching to black.

Dimensions.

		Inches.
Length of head,	- - - -	$\frac{1}{2}$
Breadth,	- - - - - -	$\frac{5}{16}$
Length of body,	- - - -	$9\frac{3}{4}$
Length of tail,	- - - -	$3\frac{1}{2}$

The above species are all from Liberia, West coast of Africa. They were brought to this country, with one exception, by Dr. Goheen, and put in the possession of S. S. Haldeman, Esq., of Columbia, Pennsylvania, to whose kindness I am indebted for the opportunity of describing them.

The Committee on Mr. Conrad's paper on new fossil shells of the United States, reported in favor of publication.

Descriptions of eight new Fossil Shells of the United States.

By T. A. CONRAD.

Miocene Species.

CREPIDULA.

CREPIDULA *cymbæformis.* Elliptical, very profound or ventricose; thick about the region of the beak; apex inclined towards the left margin, acute, separated from the margin of the aperture; umbo compressed, prominent; aperture dilated above the middle and rapidly narrowed towards the end opposite the beak; diaphragm concave and remote from the margin. Length $1\frac{1}{8}$ inch.

Locality. Petersburg, Virginia.

The boat-shaped outline of this shell serves to distinguish it from its congeners. It is the deepest or most ventricose of all the smooth species of the Union.

Eocene species.

CARDITA.

CARDITA *densata.* Obliquely cordate, ventricose, thick, with about twenty-five flattened costæ, obsolete towards the base, narrow, profound, elevated and crenulated on the umbo; umbo very prominent at the apex; anterior basal margin obliquely subtruncated; posterior extremity truncated, direct; cardinal area very thick and dilated, the teeth oblique. Height $1\frac{5}{8}$ inch. Length the same.

Locality. Claiborne, Alabama.

This pretty species abounds in entire specimens in the argillaceous stratum near low water mark in the Claiborne Bluff. I found none in the upper beds. Compared with C. *planicosta,* it is much smaller, comparatively shorter, thicker, and may always be readily distinguished by the crenulated ribs on the umbo.

CYTHEREA.

CYTHEREA *subimpressa.* Ovate, slightly ventricose, smooth and polished, with concentric slightly impressed lines on the anterior side; anterior side short, rather acutely rounded; posterior side produced, acutely rounded at the extremity; dorsal margin long, oblique, slightly curved; beaks prominent; lunule lanceolate, defined by a slightly impressed line. Length $1\frac{1}{8}$ inch. Height $\frac{8}{10}$ inch.

Locality. Marlbourne, Hanover county, Virginia. Mr. Ruffin.

This species may be distinguished from C. *æquorea*, by its greater comparative length, smaller size, and in wanting the strong furrows of that species. Mr. Ruffin obtained several entire specimens.

C. *liciata*. Suboval, thin and fragile, convex-depressed, surface with minute, closely arranged concentric lines; anterior margin rather acutely rounded; posterior margin obtusely rounded or subtruncated obliquely outwards, the extremity rounded; lunule lanceolate, defined by an obscure line; beaks prominent, and profoundly curved towards the anterior margin. Length 1 inch. Height $\frac{8}{10}$ inch.

Locality. Marlbourne, Hanover county, Virginia. Mr. Ruffin.

This species is related to C. *ovata*, Rogers, but is more compressed, less dilated posteriorly, the striæ more numerous and distinct on the middle of the valves, while the *ovata* has there only lines of growth.

C. *eversa*. Suborbicular or lentiform, ventricose, surface with fine, closely arranged concentric lines; anterior and posterior extremity rounded; basal margin profoundly rounded, and forming a regular curve from the extremities; umbo broad, with a prominent apex; lunule ovate-acute, marked by a well defined impressed line; cardinal teeth robust. Length $1\frac{3}{4}$ inch. Height $1\frac{5}{8}$ inch.

Locality. Marlbourne, Hanover county, Virginia.

This shell has much the exterior aspect of an ARTEMIS. Mr. Ruffin has one specimen with both valves. It occurs at Marlbourne, the residence of Edmund Ruffin, Esq., who is making important investigations in the Eocene deposits of that locality. He has kindly sent me beautiful specimens of *Cardita planicosta* and *Cardium Nicolleti*, together with the new species of CYTHEREA above described.

C. *pyga*. Suboval, ventricose, thick, with closely arranged robust concentric lines; umbo wide, prominent above; dorsal margin very oblique, rounded; posterior extremity obtusely and obliquely rounded inwards; anterior extremity much narrower than the posterior, and more acutely rounded; lunule lanceolate, defined by a distinct impressed line; cardinal teeth robust. Length $1\frac{3}{8}$ inch. Height $1\frac{1}{4}$ inch.

Locality. Potomac river, Stafford county, Virginia. Mr. Bruff.

I am indebted to Mr. Bruff, of Washington, for an opportunity to describe this species. The specimen is a right valve, very perfect, and in outline has some resemblance to C. *liciata*, but is larger, thicker, more ventricose, with much wider umbones, &c.

PECTEN.

PECTEN *elixatus*. Suborbicular, inferior valve ventricose, with fourteen wide, elevated, rounded ribs, and with concentric wrinkles. Height $1\frac{1}{4}$ inches.

Locality. Near Santee canal, South Carolina.

Occurs in friable white limestone.

Carboniferous species.

BELLEROPHRON.

BELLEROPHRON *scissile.* Dilated, profoundly ventricose from the margins of the aperture, and with coarse, transverse, irregular lines; back subangulated medially and with a medial channel, angulated and slightly carinated on the margins, the channel profound from the margin of the aperture to the middle of shell, and obsolete on the other portion of the back. Length 2 inches.

Locality. St. Genevieve.

The Committee on a communication from Dr. Alfred T. King, of Greensburg, Pennsylvania, describing fossil foot marks recently discovered in his vicinity, reported in favor of publication.

Description of Fossil Foot Marks, supposed to be referable to the classes Birds, Reptilia and Mammalia, found in the carboniferous series, in Westmoreland county, Pennsylvania.

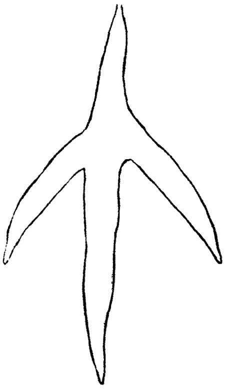
By ALFRED T. KING, M. D.

The petrifaction of tracks of animals once almost universally doubted, is now no longer a problem to be solved, and Ichnolology or Ichnolithology is admitted as a distinct branch of Paleontology. It is but an extension of the principle of Cuvier, who proved experimentally, "that when we find merely the extremity of a well preserved bone, we are able, by a careful examination, assisted by analogy and exact comparison, to determine the species to which it once belonged, as certainly as if we had the entire animal before us." Professor Kauss, of Germany, Rev. Dr. Duncan, of Scotland, and Professor Hitchcock, of Amherst College, have described various and singular foot marks in the upper new red sand stone, but so far as my information extends, they have never found either the inhumed bones, or any other decided indications of the existence of *Birds, Reptilia* and *Mammalia,* as early as the carboniferous period. If I am correct in this statement, the discovery which I am about to announce of the vivid imprint of the feet of animals referable to these classes, and to this epoch, must be regarded with no ordinary interest by geologists.

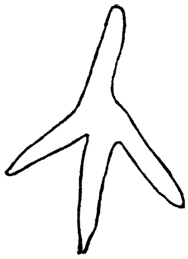
If the discovery of bird tracks by Professor Hitchcock, in 1836, as low as the upper new red sand-stone, was received with scepticism by geologists, their doubts may now be renewed with increased strength, when it is announced that birds existed analogous to our *Grallatores,* and left their foot marks in arenaceous mud, ages anterior to the deposite of the sand-stone of Connecticut river.

Professor Hitchcock originally denominated the bird tracks which he described *Ornithichnites*, or stony bird-tracks, but afterwards changed the name to *Ornithoidichnites*, or tracks resembling those of birds. I am unable to perceive the propriety of this change, inasmuch as it is universally conceded that the tracks were made by birds. I trust, therefore, I shall be pardoned for making use of the original, and, in my view, more correct and appropriate term, *Ornithichnites*.

The first track which I shall describe is one evidently made by a bird, referable to the order *Grallae*, and allied to our Gallinules. I shall therefore call it the



No. 1.* ORNITHICHNITES *gallinuloides*.—Toes 4, three before, pointing forwards, almost entirely separate, leptodactylous; middle toe much the longest; spread of lateral toes 95°; hind toe pointing directly backwards (on one foot slight inclination inwards) on the same plane with the front ones; all the toes have long and pointed claws; length of the foot about *nine* inches; length of the step not easily determined, as it seemed to vary from two to fifteen or eighteen inches.



No. 2. ORNITHICHNITES *Culbertsonii*. I have named this impression after my friend Alexander Culbertson, Esq., a gentleman of acute and penetrating mind, an accurate and original observer of all subjects pertaining to either morals or physics, and who had the kindness first to direct my attention to these singular bird tracks. The toes are 4, and much resemble the preceding, but the hind toe is longer; the front ones spread at an angle of 70°; length of the foot 4½ inches; length of the step uniformly 11 inches. The tracks were nearly in a straight line, and traceable over ten or twelve feet surface, the last step leaving a vivid imprint on the perpendicular side of the stone. This seems to indicate that the position of the rock has been changed since these birds walked upon it, and left their foot prints upon the then plastic mud, for the wonder and speculation of man in after ages Ordinary observers have uniformly compared these tracks to those made by wild turkeys; but it does not require much ornithological knowledge to detect

the incorrectness of this opinion. The hind toe of all gallinaceous birds is comparatively short, and is articulated with the tarsus higher than the rest. When the bird is walking, this toe, therefore, scarcely touches the ground at the tip. In one stony track the hind toe is long, on the same level with the front ones, and the imprint is deep and vivid.

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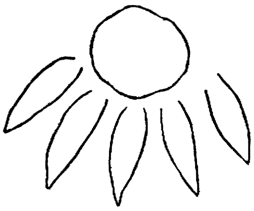
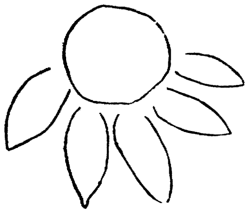
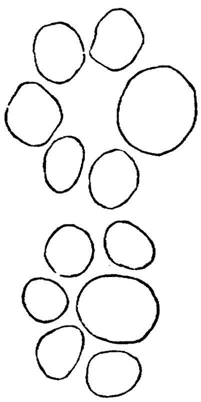
* This, and the succeeding cuts, are one-fourth of the size of the original drawings.



No. 3, I imagine, is the track of an immense Saurian reptile, for which I suggest the name of THENAROPUS* *leptodactylus.* The toes are five, slender, spreading, like an open fan, 160°; they are two inches long, with distinct claws; the extreme spread five inches, leaving an interval of one inch between each toe; the ball of the foot is spherical, and near 2½ inches across it.



No. 4 is the THENAROPUS *pachydactylus.* Toes are five, short and thick; the imprint is deep; the spread of the toes 5½ inches. The track resembles somewhat the preceding, but the toes are shorter, thicker, the imprint is deeper, and the foot is considerably larger.



Nos. 5, 6. I am unable to form even a probable conjecture in regard to the class of animals to which it should be referred. There is certainly some resemblance to the order *Digitigrada,* but as it is extremely improbable that these animals should be associated with aquatic birds and saurian reptiles, or that they should be even represented at this early period of our planet, during its half finished condition, and while the proportion of land to water must have been far less than what it is at the present day, I have almost abandoned the idea. It may have been an animal in some respects allied to the *Hippopotamus.* At all events, I shall venture the provisional name of THENAROPUS *sphærodactylus.* Toes are 5, spherical, arranged in a circle, spreading about 240°, or two-thirds of a circle. The ball of the foot is spherical, and about one and a half inches across it. The track is four inches in its transverse and conjugate diameters. In the specimen before us, the ball of the foot is situated in the centre, the toes spreading regularly around it; but in some it stands out behind and completes the digital circle.

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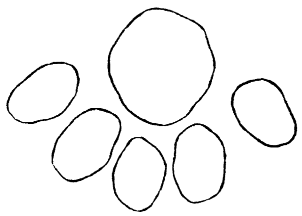
* From θεναρ, a *palm,* and πους, a *foot*—a palm-footed animal; which generic name may serve, at least provisionally, for several others of this series of foot marks.



No. 7. Thenaropus *ovoidactylus*. Toes 5, ovoid, spreading about 240°. This is evidently the track of a very large animal. Each toe is about an inch long, and their spread near six inches. The ball of the foot is about two and a half inches across it.

The stone on which these tracks were found has an exposed surface of fifteen by twenty feet, rising like the other rocks in the neighborhood to the west, and dipping at a small angle to the east. It is a coarse grained sand stone, about 150 feet beneath the largest of our coal seams, and near 800 feet beneath the topmost stratum of our coal formation. From the fact of the existence of numerous holes or pots, some of which will hold fifteen or twenty gallons, excavated, as we know they are at the present day, by the whirling of pebbles, set in motion by a running stream, I infer that the stone must have lain in the bed of a river which was subject to partial periodical desiccation. These pots, which bear a striking resemblance to those now found in our neighboring rivers, particularly the Yonghiogheny, were the objects of curiosity to the people of the neighborhood for years; but the tracks, though often noticed, were comparatively unimportant, as they presumed they were made by dogs, bears, wild turkeys, and other animals belonging to the present order of animated nature.

To the geologist, however, they are of more interest. He looks through the long vista of time which has elapsed since the stone on which these tracks are now found was plastic sand or arenaceous mud—contemplates its consolidation into stone—the subsequent excavation of these pots by whirling pebbles—the deposition of sandstone, limestone, shale, and numerous beds of coal, amounting, in all, in this vicinity, to about 800 feet. And after all these various changes, which required hundreds, and perhaps thousands of years to accomplish, he views with his mind's eye the vast agency, the overwhelming power, which doubtless convulsed the whole western continent, contorting the crust of the earth, and upheaving our vast Apalachian chain of mountains, extending from New York to Alabama, and at the same time throwing the main strata into beautiful folds, or elongated anticlinal roots. And finally, he contemplates the slow upheaval of the continent from the bed of the primeval ocean—the subsidence of the waters—the quiescence of the earth—and the various successive races of animals and plants, both visible and microscopic, which preceded the present order of animated existences. All this, doubtless, occurred, and probably in the order we have mentioned; since these animals sported in their native elements, basked on the oozy shore of a river or an ocean, and left the vivid imprint of their feet in its plastic mud. These are a few inferences from established data, which give beauty to geology, interest to these foot marks, and which are well calculated to impress the mind with sublime and stupendous conceptions.

In another locality, about twelve miles distant, but in the same synclinal axis, on a slab of fine grained micaceous sandstone, which was taken from a quarry about fifty feet beneath the rock already described, I found beautiful imprints of hind and fore feet of an animal which I have ventured to refer to the *class Mammalia*, and *order Marsupialia.* The hind and fore feet are obviously different. On the hind foot the toes are five; on the fore foot there are but four; the plantar surface on the hind foot is long, narrow, and terminates in a distinct heel; the fifth toe, whose imprint is feint, stands out almost at a right angle with the foot, and much resembles the human thumb. Indeed, the whole track does not look unlike the imprint of the human hand. The length of the foot is five and a half inches; the extreme spread of the toes five and three-quarter inches; the interval between the toes is from one, to one and a half inches; length of the toes three inches. The fourth toe on the fore foot stands out obliquely, like the fifth toe on the hind foot; length of toes two and a-quarter inches; length of the foot four and a half inches; the extreme spread of the toes four and three-quarter inches; the interval between the toes from one to two inches; the nails are quite distinct. At the external side of all the tracks there is a protuberance, which resembles the rudiment of another toe. The plantar surface is round and full, and seems to indicate that the greatest weight of the animal was before; at all events, the fore feet seem to have sunk more deeply into the plastic mud on which these animals sported in the pristine ages of the world. The tracks were in *relief.* I found but one that was in *bas relief.* The fore and hind foot follow each other very closely, there being an interval of only about two inches between them. The length of the step was about twenty inches.* I have given the average size of these truly remarkable tracks, but a few were discovered, though not very distinct, at least two or three inches larger. The slab was large, and contained twelve or fourteen very vivid imprints, together with many that were not so distinct.

This discovery evidently conflicts with an hypothesis long since thrown out, and still maintained by distinguished geologists, that the atmosphere, during the carboniferous period, was essentially different from what it is at present. It was supposed that it contained a much larger amount of carbonic acid gas, which, by absorption, caused the rapid and enormous growth of the coal plants. This could not have been, since we now find that lung-breathing animals existed at the same epoch.

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* The apparent shortness of the animal in proportion to the size, (for it must have been large,) the sluggishness of its movements—which may be inferred from the fact of the feet not tracking together, and the difference in the number of toes on fore and hind foot—seem to indicate an alliance with the *Batrachia.*

The Reports of the Corresponding Secretary, of the Librarian, and of the Treasurer of the Publication Committee, were severally read and adopted.

The Report of the Treasurer was read, and referred to the Auditors.

The Recording Secretary read his Annual Report, which was, on motion, referred to the Committee on Proceedings.

REPORT

OF THE RECORDING SECRETARY,

For 1844.

The original design in requiring from the Recording Secretary of this Society an annual Report of its transactions, may be considered now as nearly superceded by the plan adopted within the last few years of publishing its "Proceedings" at short intervals. In addition to the various written and verbal communications made to the Society, this periodical contains extracts from the minutes of all other matter which the committee, having charge of its publication, may deem useful or important to be made known.

Its pages may, therefore, be appealed to with confidence, for affording abundant information to enable all who may choose to examine them, to form an opinion of the character of its transactions, and of the degree of progress which it has made in a twelve-month.

The present report will, therefore, merely contain a short summary of the contents of the Proceedings of the present year, together with a few additional facts, not generally familiar to the members, and which may perhaps be interesting to them.

Perhaps, at no period since its organization, have the standing and prospects of the Society afforded higher gratification to its members, than at present. The cabinet has been enhanced in value and utility by an unusual amount of contributions to its various departments, in some of which, in fact, should the increase continue in the same ratio for a few years longer, there will be little or nothing for the Institution to desire. New and neat ranges of cases have been constructed within the last few months, for accommodating the large additions of books and specimens. Every gallery is now occupied, and we have at length the satisfaction of seeing the interior arrangements of this spacious and commodious Hall completed in accordance with the design originally contemplated. For the accomplishment of these desirable objects, the Society is indebted to the active efforts of the Curators, and other members.

In number, variety, and aggregate value, the communications to the Society in 1844, which have been published, will more than bear comparison with those of any previous period, and furnish additional proof of the fact stated in former reports, that this mode of publication is annually increasing in importance and advantage to it, and is therefore eminently deserving of its continued attention and care.

The report of the Treasurer will show that some financial arrangements have been effected by him during the year, materially benefitting the Society; and that the efforts of this officer are still zealous and constant to secure to it whatever advantages circumstances may place in his power.

It is doubtless still within the recollection of most of those present, that the long pending claim of the Society for $5,000 upon the heirs of an estate, (being the amount of a mortgage upon the latter, presented to the Academy by its late President, William Maclure,) was settled in the course of last year by a compromise between the parties, the Academy agreeing to accept from the heirs, in payment of the claim, about $4,550, in Pennsylvania five per cent. stock, at its original value. Mr. Alexander Maclure, desirous of carrying out the wishes and intentions of his brother to the full extent, tendered to the Academy, a few months since, the difference between the original claim and the amount accepted from the heirs. This sum, about $450, has been received, and is now in the Treasury. The Academy owes its sincere thanks to this gentleman, both for his promptness and the generous motives which influenced him in this matter. The State stock still remains in the hands of the Treasurer, under the hope, which recent circumstances have contributed to strengthen, that its par value will ultimately be realized by the Academy.

The donations to the Museum, in the different departments, have been numerous and valuable, as has been already stated.

Of the *Mammalia*, donations of skins and mounted specimens have been received from Dr. Wm. Blanding, Dr. Reynell Coates, Oliver Evans, Esq., Mr. Kilvington, and also a number in exchange.

The contributions and additions to the *Ornithological* collection have been remarkably numerous and valuable. They have been derived chiefly from Mr. Cassin, Dr. Watson, Dr. Blanding, the late Dr. Westley Johnson of Liberia, Dr. Kane, U. S. N., Mr. Woodhouse and others. A number of fine bird skins from Brazil, were purchased by subscription; and recently, a large addition has been obtained from Sweden, in exchange.

The members are generally aware of the fact, that the Academy has possessed, for several years, a large and rapidly increasing collection of bird and quadruped skins. Many of these were rare and valuable: the gifts of correspondents and friends of the Institution, to some of whom it has been at all times indebted for contributions to its collections. With all the precautions which may be taken, these skins cannot be entirely protected from injuries from insects, dust, and other causes, and the Curators therefore promptly embraced an opportunity, fortunately afforded a few months since, of employing a competent taxidermist, and upon such favorable terms, as to entrust to him the preparation and mounting of specimens of all such species as were not already displayed in the Museum. This individual has now been employed regularly up to the present time, and has accomplished a large amount of work in a very short period, and with much satisfaction to the Curators and the Zoological Committee. The whole number at present mounted and nearly ready to be deposited in the cases, is 219. Of these 172 are birds, and the remainder quadrupeds.

So large an accession of mounted specimens to the Museum, necessarily required additional accommodations, and accordingly a new and beautiful range of cases is now being erected, occupying the entire length of the lower gallery on the north side of the Hall.

I have great pleasure in stating here, that the entire expense incurred in both these improvements, has been defrayed by voluntary contributions from the members alone—to some of whom the Academy is under especial obligations on this occasion. In fact, the spirit of liberality which has always characterized the members of this Institution, has been equally displayed in this undertaking, as in many others, having for their object real advantage to it, and permanent utility.

Of Reptiles, Fishes, and Crustacea, donations have been made by Dr. Watson, Dr. R. Coates, Capt. H. F. Baker, Wm. L. Bispham, Esq., J. Dundas, Esq., Mr. J. G. Howard, Dr. Day, of Liberia, &c.

The *Entomological* collection has received numerous additions during the year. From the Rev. Dr. Thomas F. Savage of Africa, a number of very fine insects of that country; from Dr. Thos. B. Wilson of Delaware, a considerable collection of very perfect American insects; a collection of British Lepidoptera, from Mr. Cassin; and smaller donations from other individuals. By purchase and exchange, there have also been obtained a very beautiful and numerous collection of Brazilian insects, a number of fine American Lepidoptera, and within the past two weeks, about 300 specimens of European Coleoptera.

In the last report, I stated that an effort was making not only to improve and increase the Entomological collection, but also to secure it, if possible, from the constant injuries and losses to which it had been hitherto liable. The plan then proposed for the latter purpose has been since adopted, and there is every reason, at present, to suppose that it will prove effectual.

The interest already taken by the members in the improvement of this department has been such, that the number of specimens has rapidly increased within a short period, and the collection promises to equal very soon,both in size and value, any of those in the other departments. The whole of the Coleoptera which it contains are now undergoing revision, and an arrangement of the genera after the most modern system. The Academy is indebted, for this advantage, to our fellow-member, Mr. Haldeman, who has voluntarily undertaken this task, and upon whose known accuracy and intimate knowledge of the subject, the most implicit reliance can be placed.

We would again beg leave to call the attention of the members and correspondents of the Institution to this subject, and to request their further aid in the present effort to improve an interesting department of the Society's cabinet.

To the collection of *Shells*, the following are the principal donors during the the year: Mr. J. G. Anthony, of Ohio; Rev. Dr. Savage, of Africa; Mrs.

Lucy W. Say, Mr. Peterson, Mr. Haldeman, and Dr. Gould, of Boston. Others have been derived from Dr. Mighels of Maine, Mr. Cassin, Dr. R. Coates, Capt. Baker; and recently, a very large accession has been made through exchange.

Of *Fossils*, the donations this year have been fewer than usual. A most interesting one, however, was that by General Irick, of Vincentown, N. J., of the head of a fossil crocodile discovered in the vicinity of that place, and which has formed the subject of a paper by Dr. Morton, who has regarded it as new. Another donation of much value has recently been received from Dr. Alfred T. King, of Westmoreland county, in this State, of fossils from the carboniferous limestone of that region.

The collection of *Crania* possessed by Dr. Morton, has been increased during the present year by many additions of great value and interest. This collection is now of such extent as to require, for its display, the entire range of cases on the south flying-gallery, which have been resigned to Dr. Morton for this purpose. It numbers about 600 crania, derived from all the races of men, ancient and modern, and 640 crania of the lower orders of animals, forming an aggregate believed to be greater than is possessed by any other individual living.

Additions to the *Mineralogical* cabinet have been made by Messrs. Ashmead, Johnson, H. S. Stephens, Rice, Woodhouse, Kendall, Mease, Prof. Durbin, and others. But the most important and valuable donation to this department, during the present, or perhaps any previous year, has been that of an entire suite of the minerals of Cumberland, Durham, Westmoreland, and other counties of England, by our fellow-member, Dr. Thomas B. Wilson. This beautiful collection was obtained by this gentleman during his recent visit to that country, and was presented to the Academy immediately upon his return home. It has greatly enriched our Cabinet, and the donor well deserves, and has received the sincere thanks of the Society.

In *Botany*, some donations of value have also been received. They are chiefly from Dr. Englemann, of native Western plants; from the late Dr. Westley Johnson, of African plants; and from Mr. Jacob Snyder, jr., of this city, of Alpine plants; besides which, are smaller donations of fruits, seed vessels, single specimens of plants, &c., from a number of contributors.

The additions to the *Library* during the present year are as follows: Folios, 4; Quartos, 26; Octavos, 16; Periodicals, (including Journals, Proceedings of Societies, &c.,) 35; Publications in pamphlet form, 36; and Maps and Charts, 4. Of the whole number, 46 have been received from authors and editors, 27 from members, and 50 from Correspondents, Societies, &c., and also in exchange. The average is about equal to that of late years.

One of the new ranges of cases erected this season, to which reference has been made at the commencement of this report, was for the use of the Library. The rapid increase of the latter has required this addition for some time past, a large number of volumes having been crowded out of view, for want of room in their appropriate places, and their existence in the library scarcely known to the members. These have now been restored to their proper situations, and a more general distribution of the books has been made by the Library Committee. Labels have been also placed over each case, indicating the nature of its contents, and indeed the whole arrangements of the Library, as now made, add greatly to its facilities.

In an Institution like ours, a Museum, however extensive and systematically arranged, would obviously be of comparatively little advantage without a corresponding Library of well selected works on subjects of Natural Science. To render it entirely available, as few restrictions as possible should be placed upon it; and this has always been the object and aim of the Society. Access to the books is at all times freely permitted to the members, and a large proportion of them are allowed to be taken from the Hall. But experience has lately proved that these privileges are not without some disadvantages. The Library Committee, while engaged in the duty just mentioned, (of re-arrangement of the books,) discovered that a considerable number were missing. Some of them are works of much value, and which cannot easily be replaced; and although it is highly probable that many may be recovered through proper efforts, the fact stated would seem to render it incumbent upon the Society to inquire, whether the present regulations, if properly complied with by the members, are sufficient for the security of the Library, or whether some further restrictions are necessary.

From a hasty examination of the Librarian's book of entries of additions to the Library, since the publication of the catalogue in 1836, the number may be estimated at nearly 700, including all except maps and charts. If this number be added to those stated in a report of the Library Committee accompanying the catalogue, to be in the possession of the Academy at the above period, the total now in the Library, including duplicates, would be little short of 8,000. From this estimate, the collection of maps and charts, now numbering about 500, is excluded.

Of the entire number of works in the Library, upwards of 1,500 are exclusively on subjects of Natural Science, and about 1,200 others are journals and dictionaries, a large proportion of the contents of which are on similar subjects, and are highly important and often indispensable as works of reference.

Although, with such a collection of works at his command, the resources of the student of natural history would seem to be ample enough, yet our Library is greatly deficient in modern standard publications in almost every department. Industrious and active laborers in the cause are now so numerous throughout the world, and the field for investigation still so extensive, that new discoveries are constantly made, new truths developed, and even materials for the formation of new systems collected. To enable our Library to keep pace with the rapid progress of modern Science, it would be necessary for a Library fund to be established—a measure which the Society has always had in view—and placed in the hands of a competent committee, willing to undertake the duty of impartially selecting from the numerous publications of the day, such as would be of the greatest practical value to the Institution.

This subject is not now referred to with the object of urging it upon the Society, or even with the expectation of any action upon it at present, as it involves an expenditure which, at this time, cannot be incurred; but it deserves to be always kept in view, and should engage the attention of the Society whenever practicable, as the one now most important to its interests.

The "Proceedings" are now so closely identified with the character of the Society itself, that a brief sketch of the contents of those numbers which have appeared during the year, can scarcely be omitted in an annual report.

The support which this publication has received since it originated in 1841, has been highly encouraging, and this has increased during the present year. The second volume was commenced on the first of January last, since which time five numbers have been issued, and the sixth is now in press, and nearly ready for distribution. Together, these numbers will contain between 180 and 190 pages of matter, (much of which is in small type,) published in twelve months. This proportion is larger than in any previous similar period since this periodical was commenced by the Society.

The first number contains a highly interesting letter from I. G. Strain, Esq., U. S. N., one of the correspondents of the Institution. While at Rio Janiero, towards the close of last year, awaiting the completion of his preparations for making a hazardous journey of exploration into the interior of Brazil, he devoted a portion of his time to the translation of an important paper, which had been communicated by Dr. Lund, of Copenhagen, to a Scientific Society of Brazil, on the subject of some remarkable organic remains which the latter had discovered in the calcareous rocks of that country. This translation was obligingly furnished by Mr. Strain to the Academy, and was published in the Proceedings soon after it was received. The information contained in Dr. Lund's paper, of his discovery of human remains, in a state, to all appearance, fossilized, is of great interest, and if verified by furtber developements of a similar character, may tend to throw much light on a subject now attracting great attention: the ancient history and physiology of the human race.

The next communication is by Dr. Morton, being a description of the cranium of a supposed new species of Hippopotamus, to which he has given the name *H. minor.* The skull had been sent to Dr. Morton by Dr. Goheen of Liberia, Africa, who himself believed it to belong to a species at present unknown to naturalists, although the animal is by no means uncommon in the river St. Pauls, from the banks of which he had obtained the specimens which Dr. Morton possesses.

A large portion of the succeeding number is occupied by papers describing new species of N. American Coleoptera, from Dr. Melsheimer, and the Rev. Mr. Zeigler, of Pennsylvania; and from Mr. John L. Le Conte, of New York. Dr. M.'s paper, which is long, and includes a large number of species, has been drawn up with great care, and evinces a closeness of observation, and a minuteness of investigation, which are rarely exceeded by those devoted to the study of Entomology. The communications of the two other gentlemen named, are not equal in length, but they are likewise entitled to great credit.

In the third number will be found a paper by Dr. Hallowell, describing new African reptiles. This paper, and another published in the fifth number, will serve to maintain the reputation which the author enjoys, of being a cautious and accurate describer, especially of objects in this department of Natural History.

Dr. Morton has communicated another paper in the fourth number, describing a very interesting fossil, the nearly perfect head of a Crocodile, already alluded to, from the Cretaceous strata of New Jersey. To this relic Dr. Morton has given the specific name of *Clavirostris*, and closes his paper with a list of all the organic remains hitherto discovered in the same strata.

In the fifth number there is a letter to Professor Espy from several of his friends in this State, in which some facts are stated tending to corroborate his theory that rain may be artificially produced in time of drought. This number also contains a description of some new organic remains from the Eocene of South Carolina by Dr. Ravenel, of Charleston; a portion of another voluminous paper on N. A. Coleoptera, by Dr. Melsheimer; the paper by Dr. Hallowell already referred to; an analysis of sulphur springs in the State of New York by Professor Reid, of the N. Y. College of Pharmacy; and some interesting observations by Dr. Morton, on a new series of Ancient Egyptian Crania which he had recently received, the characters of which he has been gratified to find fully bear him out in his results previously obtained from the larger collection which form the materials of his Crania Egyptiaca.

In addition to the different written communications which have been thus hastily noticed, there are a number of others in a verbal form which have been offered before the Society during the year: chiefly from Prof. Johnson and Dr. Morton. The former has given some further results of his extensive researches and experiments upon the habitudes and properties of coals of this and other countries, and has greatly added to our knowledge of their comparative value for the purposes of fuel and the arts.

Between the 1st of December, 1843, and the 1st of the present month, the Society has elected eight new members, and eleven correspondents. Ten of the latter are residents in the United States, and one is foreign.

And here the present Report might be closed. But it would appear to be doing injustice to the memory of two of our late fellow members—Dr. Marmaduke Burrough, and Nathan Dunn—were I to omit the opportunity here afforded me of devoting a few words to a notice of each.

The former, as is well known to all present, passed abroad the greater part of the active period of his life, and during his extensive travels, never failed to acquaint himself with the natural productions of the various countries which he visited. His collections were made less for himself, than for the purpose of affording gratification to his numerous friends, and of enriching the cabinets of those Institutions with which he was connected. But none received so abundant a share of these treasures as the Academy. There is scarcely a department of the museum which will not amply attest this fact. The name of Dr. Burrough is associated with many recollections of benefits conferred on this Institution, and his loss will ever be deplored by her as that of one of her warmest supporters, and most disinterested and active friends.

From the executors of the late Nathan Dunn we have learned, with mingled feelings of pleasure and regret, that his will contains a bequest to this Institution of $10,000, but that in consequence of circumstances which need not be referred to here, there is but little probability that the intentions of the testator can be complied with.

The possession of this sum would not only render the Academy independent, but it would be also enabled thereby to carry out several favourite projects which have been long contemplated. Whether this bequest be realised or not, however, the Academy is equally bound to record its gratitude for this unexpected instance of noble liberality towards it, and also for the unequivocal evidence which it affords of the testator's approval of the objects for which this Institution was founded.

All which is respectfully submitted by

WM. S. ZANTZINGER.
Recording Secretary.

Hall of the Academy, Dec. 31, 1844.

The Society then proceeded to an election for Officers for 1845. The following were announced duly chosen as such:

PRESIDENT.

William Hembel.

VICE PRESIDENTS.

J. Price Wetherill,
Samuel George Morton, M. D.

CORRESPONDING SECRETARY.

Walter R. Johnson.

RECORDING SECRETARY.

William S. Zantzinger, M. D.

LIBRARIAN.

A. Langdon Elwyn, M. D.

TREASURER.

George W. Carpenter.

CURATORS.

Samuel Ashmead,
William S. Vaux,
John Cassin,
Gavin Watson, M. D.

AUDITORS.

Robert Pearsall,
Robert Bridges, M. D.
William S. Vaux.

COMMITTEE OF PUBLICATION.

A. L. Elwyn, M. D.
T. A. Conrad,
John Simmons,
Wm. S. Vaux,
A. E. Jessup.

Alfred T. King, M. D., of Greensburg, Westmoreland county, Pennsylvania, was then elected a Correspondent of the Academy.